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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,892	09/15/2003	Oleg P. Kishkovich	301500.3000-106	1170
207	7590	07/14/2005	EXAMINER	
WEINGARTEN, SCHURGIN, GAGNEBIN & LEOVICI LLP TEN POST OFFICE SQUARE BOSTON, MA 02109			STEVENSON, ANDRE C	
			ART UNIT	PAPER NUMBER
			2812	

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/662,892	<b>Applicant(s)</b> KISHKOVICH ET AL.	
	<b>Examiner</b> Andre' C. Stevenson	<b>Art Unit</b> 2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on April 11, 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 12-14 and 20-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 15-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
**LYNNE A. GURLEY**

**PRIMARY PATENT EXAMINER**  
**TC 2800, AU 2812**

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)<br>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)<br>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>05/19/04</u> | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____<br>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)<br>6) <input type="checkbox"/> Other: _____ |
|--|--|

## **Detailed Action**

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on May 19, 2004 was filed before the mailing date of the first action on the merits. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Election/Restrictions***

Applicant's election without traverse of Group I, claims 1-11 and 15-19, in the reply filed on April 11, 2005 is acknowledged.

Claims #12-14 and 20-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on April 11, 2005.

### ***Claim Rejections - 35 USC § 112***

Regarding **claim #9**, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

**Claim #19** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claim #19** recites the limitation "the collection device" in line #2. There is insufficient antecedent basis for this limitation in the claim.

Clarification or correction of the above situations is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims #1, 3, 4, 6-9, 11 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshi et al. (U.S. Pat. No. 5,108,178, Pat. Date 04/28/92, File 03/29/90), in view of Aoki et al. (U.S. Patent No. 5,676,760, Patent Date 10/14/97, Filed 03/23/95).

Oshi substantially shows, in figures 1-7 and corresponding text, in a similar method for purging gas, with respect to **claim #1**, system for determining and monitoring contamination, comprising at least one collection device (**item #18 or Ar**) in fluid communication with a gas flow extending through an optical system of the tool (**item #8**), the collection device (**item #1**) having an adsorptive material (**item #9**) and a saturation capacity, the collection device being operated past the saturation capacity to adsorb contaminants in the gas flow (**column #4, lines 2-44**). The Examiner notes that Oshi does not explicitly state a, "device being operated past the saturation capacity to adsorb contaminants in the gas flow". The Examiner takes the position that

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the above mention statement is a description of the method of use, and not a description of the system itself. Also, the Examiner notes that the adsorbing component used by the prior art (polytetrafluoroethylene), has the same absorbing and regenerative properties of the polymer described in the disclosure and claims; thus, must be able to operate past saturation capacity also. For the above reasons, the Examiner takes the position that Oshi shows the system of claim #1. The Examiner refers that applicant to MPEP 2112 [R-2] V and In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)). ***Pertaining to claim #3***, Oshi shows a system wherein the collection device (item #10) is tubular (column #4, lines 16-23). ***Pertaining to claim #4***, Oshi shows a system further comprising a collection device that is not in fluid communication with the gas flow (column #2, lines 59-67; column #3, lines 1-18). ***Pertaining to claim #6***, Oshi shows a system wherein the adsorptive material comprises the polymer Tenax (column #4, lines 2-16). The examiner makes note that Oshi does not state explicitly the “polymer Tenax”. The Examiner takes the position that the polymer polytetrafluoroethylene, shown in the prior art, has the same absorbing and regenerative properties of the polymer described in the disclosure and claims; thus, it must be able to operate past saturation capacity also, and therefore the choice of a Tenax polymer is a matter of choice that does not add to the inventive step of claim #6. For the above reasons, the Examiner takes the position that Oshi shows the system of claim #6. ***Pertaining to claim #7***, Oshi shows a system wherein the contamination includes at least one of refractory compounds, high molecular weight compounds and low molecule weight compounds (column #2, lines 3-16). ***Pertaining to claim #8***, Oshi shows a contamination analysis apparatus having an optical element comprising: a collection device (Fig.#2) comprising a material having a

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surface property of the optical element (**item #24a & b**) coupled to a gas source (**item #20**), the collection device being coupled to a light source (“**light**”) and having an adsorptive material and operated past a saturation capacity to adsorb contaminants (**column #3, lines 42-67; column #4, lines 1-2**). *Pertaining to claim #9*, Oshi shows a system wherein the adsorptive material comprises a polymer such as Tenax (**column #4, lines 2-16**). The examiner makes note that Oshi does not state explicitly a “polymer such as Tenax”. The Examiner takes the position that the polymer polytetrafluoroethylene, shown in the prior art, has the same absorbing and regenerative properties of the polymer described in the disclosure and claims; thus, it must be able to operate past saturation capacity also, and therefore the choice of a Tenax polymer is a matter of choice that does not add to the inventive step of claim #9. For the above reasons, the Examiner takes the position that Oshi shows the system of claim #9. *Pertaining to claim #11*, Oshi shows a system contamination analysis apparatus of Claim 8, wherein the contaminants include at least one of refractory compounds, high molecular weight compounds and low molecular weight compounds (**column #2, lines 2-16**). *Pertaining to claim #15*, Oshi shows a system filtering system for removing contamination (**Fig. #1**), comprising at least one collection device (**item #2**) in fluid communication with a gas flow (**item Ar**) extending through an optical system (**item #8**) of the semiconductor processing system (**column #2, lines 59-67; column #3, lines 1-18**), at least one collection device (**fig. #3, item #1**) having a selectively permeable membrane (**item #9**) that filters contaminants such as at least one of a refractory compound (**column #4, lines 2-16**), a high molecular weight compound and a low molecular weight compound from the gas flow (**column #2, lines 3-16**). *Pertaining to claim #16*, Oshi shows a system wherein the collection device is coupled to a vacuum source to increase a pressure

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gradient across the selective membrane (**item #9**) (**Abstract; column #2, lines 59-67; column #3, lines 1-9**). *Pertaining to claim #17*, Oshi shows a system wherein the gas flow comprises clean dry air, nitrogen, and/or other inert gases (**column #3, lines 60-67; column #4, lines 1-2**). *Pertaining to claim #18*, Oshi shows a system further comprising a regenerative adsorption device in fluid communication with an output permeate stream from the selectively permeable membrane (**Fig. #3 & 4; column #4, lines 2-16**). *Pertaining to claim #19*, Oshi shows a system further comprising a second collection device (**fig. #1, item #32**) in fluid communication with a residue stream of the collection device, the second collection device having a second membrane that is selectively permeable to oxygen and water (**column #4, lines 2-16**).

Oshi fails to show, with respect to **claim #1, 8 and 15**, determining and monitoring contamination in a photolithography instrument or in a semiconductor processing system.

Aoki, in a similar method for purging gas used in a photolithographic process, in figures #1 –22, with respect to **claims #1, 8 and 15**, teaches determining and monitoring contamination in a photolithography instrument or in a semiconductor processing system (**column #3, lines 21-36; column #15, lines 56-67; column #16, lines 34-53**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, with respect to **claim #1, 8 and 15**, to include a structure for determining and monitoring a contamination in a photolithography instrument, into the system of Oshi, as taught by Aoki, with the motivation that the addition of Aoki's system would provide a sampling

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system for the monitoring and removal of contaminants in a photolithography or semiconductor process.

Claim #2, 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshi et al. (U.S. Pat. No. 6,087,208, Pat. Date 07/11/00, File 03/31/98) and Aoki et al. (U.S. Patent No. 5,676,760, Patent Date 10/14/97, Filed 03/23/95), as applied to claims #1, 3, 4, 6-9, 11 and 15-19 above, and in further view of Tokunaga et al. (U.S. Patent No. 6,491,885 B1, Patent Date 12/10/02, Filed 06/28/00).

Oshi and Aoki substantially show the claimed invention, as listed in the text above.

Oshi and Aoki fail to show, **pertaining to claim #2,5 and 10**, wherein the adsorptive material comprises glass spheres having predetermined surface properties for adsorption of contaminants.

Tokunaga teaches, **pertaining to claim #2, 5 and 10**, a system wherein the adsorptive material comprises glass spheres having predetermined surface properties for adsorption of contaminants (**column #6, lines 30-67**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, with respect to **claim #2, 5 and 10**, to include a system wherein the adsorptive material comprises glass spheres having predetermined surface properties for adsorption of contaminants, into the method of Oshi and Aoki, as taught by Tokunaga, with the



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motivation that the addition of Aoki's system would allow the apparatus to be capable of filtering liquids as well as gases.

### Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's Matsumoto et al. (U.S. Pat. No. 6,411,368), Suzuki et al. (U.S. Pat. No. 4,002,722), Fidler et al. (U.S. Pat. No. 5,686,996, Takahashi et al. (U.S. Pat. No. 6,757,051).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre' Stevenson whose telephone number is (571) 272 1683. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:30 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt, can be reached on (571) 272 1873. The fax phone number for the organization where this application or proceeding is assigned is (703) 308 7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956. Also, the proceeding numbers can be used to fax information through the Right Fax system;

**(703) 872-9306**

Andre' Stevenson

07/08/05

  
**LYNNE A. GURLEY**  
**PRIMARY PATENT EXAMINER**  
**TC 2800, AU 2812**